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Kawasaki

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(54) MOBILE TERMINAL DEVICE

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See application file for complete search history.

(56) References Cited

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U.S. PATENT DOCUMENTS

FOREIGN PATENT DOCUMENTS

JP 05-061423 A 3/1993 JP 06-083779 A 3/1994 (Continued)

OTHER PUBLICATIONS

International Search Report corresponding to International Application No. PCT/JP2012/067567, Jul. 27, 2012, 5 pages.

(Continued)

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(57) ABSTRACT

Hale and Dorr LLP

The mobile terminal device of the present invention includes at least one hinge and a first enclosure and second enclosure that are openably/closably connected by way of the hinge. The distances between the center of the hinge and the non-opposing surface of each of the first enclosure and second enclosure are equal. When the first and second enclosures in a closed state are rotated by the angle formed by the two normal lines drawn from the center of the hinge to the non-opposing surface of each of the first enclosure and second enclosure, the portions at which the non-opposing surfaces intersect the hinge-side side surfaces of the first enclosure and second enclosure match. The diameter of the hinge is equal to or less than the total length of the distances between the center of the hinge and the non-opposing surface of each of the first enclosure and second enclosure.

8 Claims, 27 Drawing Sheets

